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cont.

thinning the wiring by removing a surface layer of the wiring to a depth of at least 5 nm; and

forming a metal silicide film on a surface of the wiring by causing reaction between a surface layer

of the thinned wiring and a refractory metal which reacts with silicon to form silicide,

wherein the wiring thinning step comprises the steps of:

oxidizing the wiring, using a rapid thermal processing, beginning on an upper surface thereof

down to a predetermined depth; and

removing an oxidized section of the wiring oxidized in the oxidizing step.

5. (Twice Amended) A method for manufacturing a semiconductor device, comprising the steps

of:

forming wiring comprising silicon on a surface of a semiconductor substrate;

covering part of the wiring with a resist pattern;

implanting arsenic ions into the wiring using the resist pattern as a mask;

removing the resist pattern;

oxidizing the wiring, using a rapid thermal processing, beginning on an upper surface thereof down
to a predetermined depth;

removing an oxidized section of the wiring oxidized in the oxidizing step and thereby thinning the
wiring; and

forming a metal silicide film on a surface of the wiring by causing reaction between a surface section
of the thinned wiring and a refractory metal which reacts with silicon to form silicide.
